

CLAIM AMENDMENTS

MAY 31 2007

- 1 1. (Original) A method of processing a signal with frequencies within a frequency band having a bandwidth B, the signal including a plurality of messages, each message having frequencies within a unique frequency band, where the frequency bands of the plurality of messages occupy the bandwidth B, and where messages with adjacent frequency bands may have different bandwidths, said method comprising:
 - 6 receiving the signal;
 - 7 separating the signal into groups of messages having frequency bands with the same bandwidth, all messages in any group occupy non-adjacent frequency bands;
 - 10 combining the messages of each group;
 - 11 applying each combined group of messages to a separate amplifier to amplify each combined group of messages; and
 - 13 separating each amplified group of messages into separate messages.
- 1 2. (Original) A method as claimed in claim 1, further comprising transmitting each separated message to a respective receiving station.

1 3. (Original) A method of communicating a plurality of messages from an
2 originating station, through a relaying station, to a plurality of receiving stations, said
3 method comprising transmitting the plurality of messages from the originating station to
4 the relaying station in a signal with frequencies within a frequency band having a
5 bandwidth B, with each message having frequencies within a unique frequency band,
6 where the frequency bands of the plurality of messages occupy the bandwidth B, and
7 where messages with adjacent frequency bands may have different bandwidths; and at
8 the relaying station:

9 separating the messages into groups of messages having the same
10 bandwidth, where all messages in any group occupy non-adjacent frequency bands;

11 combining the messages of each group;

12 applying each combined group of messages to a separate amplifier to
13 amplify each combined group of messages;

14 separating each amplified group of messages into separate messages;

15 and

16 transmitting each separated message to a respective receiving station.

1 4. (Currently amended) An article, comprising a storage medium having
2 instructions stored thereon, the storage medium being readable by an apparatus for
3 processing signals, the instructions when executed processing a signal with frequencies
4 within a frequency band having a bandwidth B, the signal including a plurality of
5 messages, each message having frequencies within a unique frequency band, where
6 the frequency bands of the plurality of messages occupy the bandwidth B, and where
7 messages with adjacent frequency bands may have different bandwidths, the
8 instructions processing the signal by receiving the signal; separating the signal into
9 groups of messages having frequency bands with the same bandwidth, where all
10 messages in any group occupy non-adjacent frequency bands; combining the
11 messages of each group; applying each combined group of messages to a separate
12 amplifier to amplify each combined group of messages; and separating each amplified
13 group of messages into separate messages.

1 5. (Original) An article as claimed in claim 4, wherein the instructions when
2 executed further transmit each separated message to a respective receiving station.

1 6. (Currently amended) An article, comprising a storage medium having
2 instructions stored thereon, the storage medium being readable by an apparatus for
3 processing signals, the instructions when executed communicating a plurality of
4 messages from an originating station, through a relaying station, to a plurality of
5 receiving stations, the instructions communicating the messages by transmitting the
6 plurality of messages from the originating station to the relaying station in a signal with
7 frequencies within a frequency band having a bandwidth B, with each message having
8 frequencies within a unique frequency band, where the frequency bands of the plurality
9 of messages occupy the bandwidth B, and where messages with adjacent frequency
10 bands may have different bandwidths; and at the relaying station separating the
11 messages into groups of messages having the same bandwidth, where all messages in
12 any group occupy non-adjacent frequency bands; combining the messages of each
13 group; applying each combined group of messages to a separate amplifier to amplify
14 each combined group of messages; separating each amplified group of messages into
15 separate messages; and transmitting each separated message to a respective receiving
16 station.

1 7. (Original) A apparatus for processing a signal with frequencies within a
2 frequency band having a bandwidth B, the signal including a plurality of messages,
3 each message having frequencies within a unique frequency band, where the frequency
4 bands of the plurality of messages occupy the bandwidth B, and where messages with
5 adjacent frequency bands may have different bandwidths, said apparatus comprising:
6 an antenna to receive the signal;
7 a first demultiplexor to separate the messages;
8 a filter unit to filter and group the separated messages into groups of
9 messages having the same bandwidth, where all messages in a group occupy non-
10 adjacent frequency bands;
11 a combining circuit to combine the messages of each group;
12 an amplifier for each group of messages to amplify each combined group
13 of messages; and
14 a second demultiplexor to separate each amplified group of messages into
15 separate messages.

1 8. (Original) An apparatus as claimed in claim 7, wherein the amplifier
2 comprises a traveling wave tube amplifier.

1 9. (Original) An apparatus as claimed in claim 7, further comprising a
2 transmitting antenna to transmit the separated messages.

1 10. (Original) An apparatus as claimed in claim 7, comprising an earth-
2 orbiting satellite.

1 11. (Original) A communication system, comprising:
2 an originating station to transmit a signal including a plurality of messages,
3 the signal having frequencies within a frequency band having a bandwidth B, with each
4 message having frequencies within a unique frequency band, where the frequency
5 bands of the plurality of messages occupy the bandwidth B and where messages with
6 adjacent frequency bands may have different bandwidths;
7 a plurality of receiving stations to receive the plurality of messages; and
8 a relaying station including an antenna to receive the signal, a first
9 demultiplexor to separate the messages, a filter unit to filter and group the separated
10 messages into groups of messages having the same bandwidth, where all messages in
11 any group occupy non-adjacent frequency bands, a combining circuit to combine the
12 messages of each group, an amplifier for each group of messages to amplify each
13 combined group of messages, a second demultiplexor to separate each amplified group
14 of messages into separate messages, and means for transmitting the separated
15 messages to their respective receiving stations.

1 12. (Original) An apparatus as claimed in claim 11, wherein the amplifier
2 comprises a traveling wave tube amplifier.

1 13. (Original) A communication system as claimed in claim 11, wherein said
2 relaying station comprises an earth-orbiting satellite.

1 14. (New) An apparatus for processing a signal with frequencies within a
2 frequency band having a bandwidth B, the signal including a plurality of messages,
3 each message having frequencies within a unique frequency band, where the frequency
4 bands of the plurality of messages occupy the bandwidth B, and where messages with
5 adjacent frequency bands may have different bandwidths, comprising:
6 means for receiving the signal;
7 means for separating the signal into groups of messages having
8 frequency bands with the same bandwidth, all messages in any group occupy non-
9 adjacent frequency bands;
10 means for combining the messages of each group;
11 means for applying each combined group of messages to a separate
12 amplifier to amplify each combined group of messages; and
13 means for separating each amplified group of messages into separate
14 messages.

1 15. (New) The apparatus of claim 14, further comprising means for
2 transmitting each separated message to a respective receiving station.